REMARKS

Reconsideration is respectfully requested.

In the Office Action, the drawings were objected to based on the presence of extraneous matter in Figs. 1, 3 and 4. Claims 11-22 were rejected under 35 U.S.C. 112, second paragraph as being indefinite. Claims 1-10 and 23 were rejected under 35 U.S.C. 103(a) as being unpatentable over Karnes (6,600,642) in view of Wassing (4,527,215).

By the present amendment, replacement drawing sheets comprising Figs. 1, 3 and 4 have been submitted. In Fig. 1, the designation ".005" has been removed. In Fig. 3, the data sets regarding monitor settings and the designation "Plot 1" have been removed. In Fig. 4, the legend with symbols, the associated symbols, and the designation "Diagram 1" have been removed. Reference numbers 30 and 32 have been added to identify the air gaps. The specification has been amended to remove references to the designation ".005" being shown in Fig. 1, and to identify the reference numerals 30 and 32 added to Fig. 4. In view of the foregoing, it is believed that the drawing objections have been overcome.

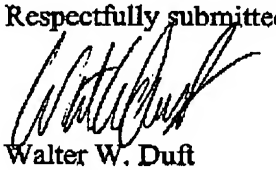
Claim 11 has been amended to change line 7 from "positioning said first and second end faces during said forming steps so as to be spaced" to "said first and second end faces being spaced." This substituted language should remove the objection that "positioning said first and second end faces during said forming steps" is unclear and may not read on the conventional and laser etching processes discussed in the specification as exemplary techniques that may be used to form the air gap. As such, it is believed that the rejection of claims 11-22 under 35 U.S.C. 112, second paragraph has been overcome and these claims should now be allowable, there being no other rejection outstanding against them.

Turning now to the rejection of claims 1-10 and 23 under 35 U.S.C. 103 based on Karnes and Wessing, Applicants respectfully traverse. The rejection fails to fully address the limitation found in each of independent claims 1 and 23 of "said air gap also having a defined gap length corresponding to the length of said first and second end faces, said gap length being of a size that maximizes spark gap life over repeated discharge cycles without introducing undesirable amounts of capacitance." Page 5 of the Office Action only partially addresses this claim limitation by stating that "[I]t is inherent to have a parasitic capacitance between two parallel traces, therefore it is inherent to consider the length of such parallel traces and a distance between them as a source of a parasitic capacitance." There is no mention of Karnes or Wessing teaching or suggesting the concept of constructing a spark gap so that the length of its air gap is sized to maximize spark gap life over repeated discharge cycles without introducing undesirable amounts of capacitance." In Karnes, there are multiple air gaps between the floating element 32 and the telecommunication lines 24 and the ground trace 28. Karnes does not mention the length of these air gaps or discuss the goal of maximizing spark gap life over repeated discharge cycles. In fact, Karnes shows that the ground trace 28 has points or teeth to encourage arcing at specific locations. This concentration of arcing would seemingly degrade the air gap very quickly in these locations and is contrary to Applicants' concept of spreading the arcing along the length of an air gap so as to maximize spark gap life. In sum, Karnes does not teach or suggest a spark gap with an air "gap length being of a size that maximizes spark gap life over repeated discharge cycles without introducing undesirable amounts of capacitance." Presumably, the Karnes air gaps do not have lengths that are maximized in the manner claimed by Applicants. The same is true of Wessing, which discloses a gas discharge tube device and not an air gap device.

Insofar as Karnes and Wessing do not disclose or suggest all of the elements of independent claims 1 and 23, the obviousness rejection under 35 U.S.C. 103 cannot be sustained. As established by current Federal Circuit case law, the lack of an explicit or implicit teaching, suggestion or motivation to modify the subject matter of a prior art reference so as to achieve the claimed invention precludes an obviousness rejection based on that reference. See MPEP 2143. Claims 1-10 and 23 are thus believed to be allowable over Karnes and Wessing.

In view of the foregoing, Applicant respectfully requests that all rejections be withdrawn and that Notices of Allowability and Allowance be issued.

Respectfully submitted,



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ANNOTATED SHEET SHOWING CHANGES

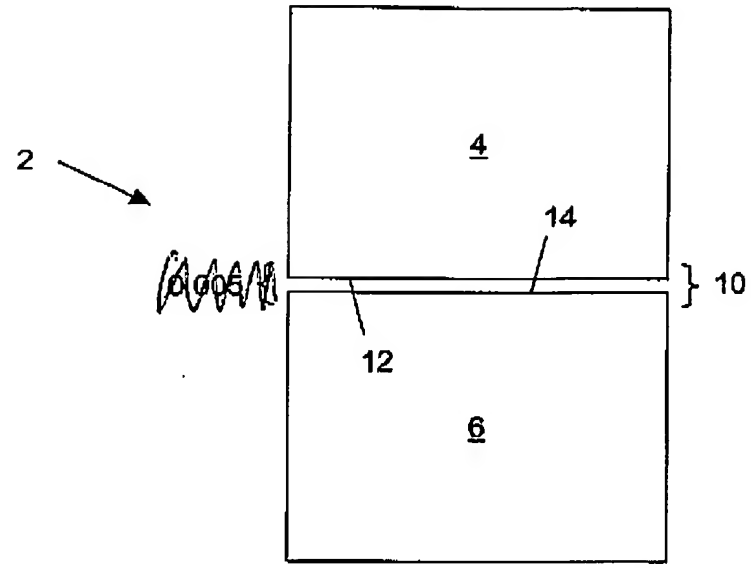


FIG. 1

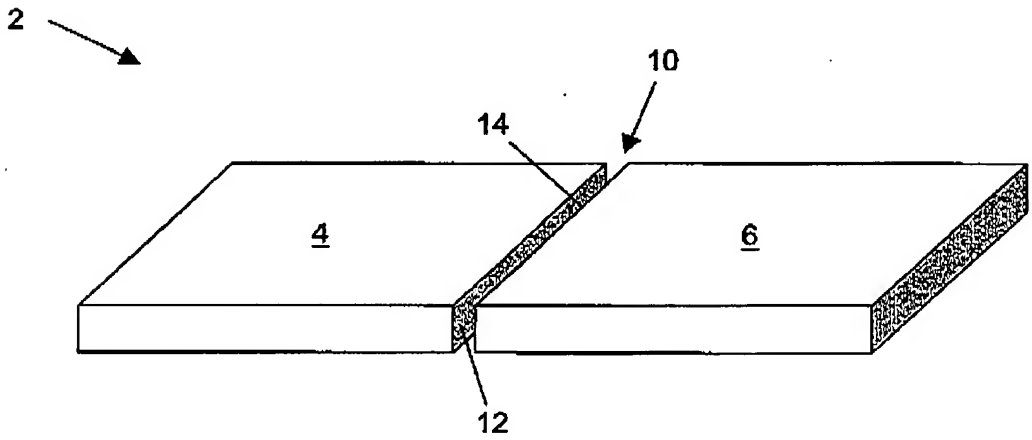
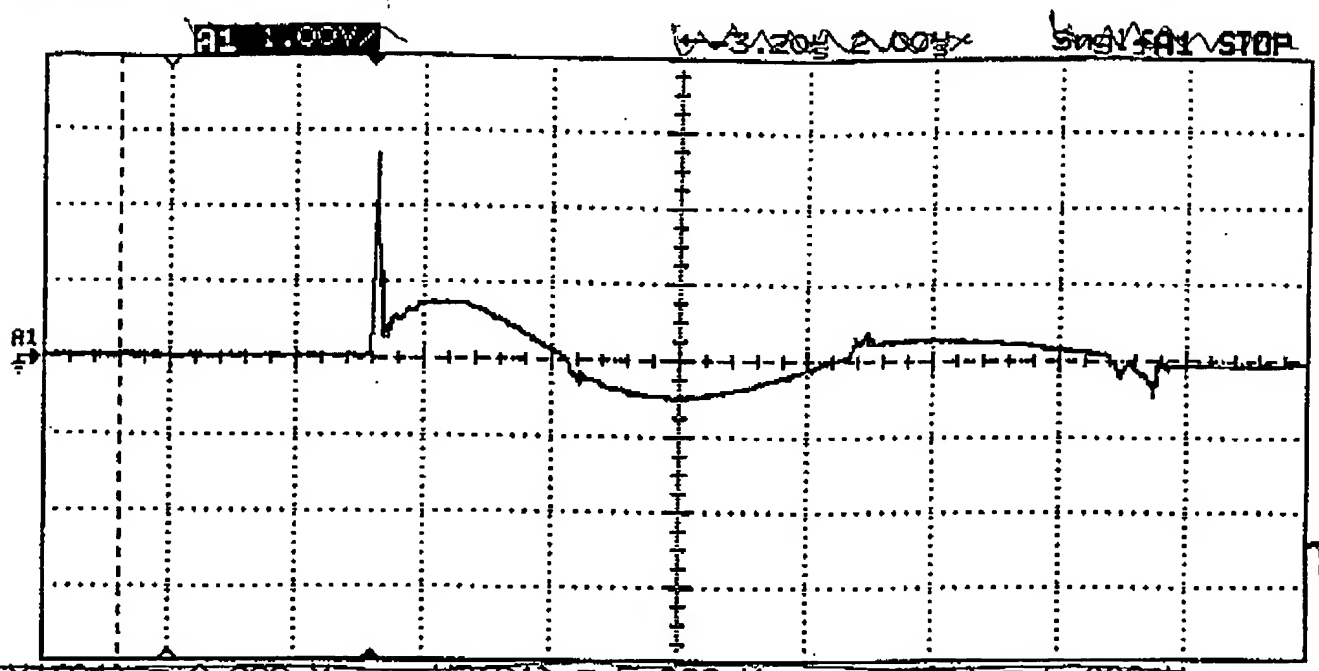


FIG. 2

ANNOTATED SHEET SHOWING CHANGES



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V1(A1) = 0.000 V V2(A1) = 5.000 V ΔV(A1) = 5.000 V

Analog	State	Volts/div	Position	Coupling	BW Limit	Invert	Probe
A1	on	1.000 V	0.000 V	dc	off	off	1:1 A
A2	off	80.00 V	0.000 V	dc	off	off	10:1 A

Horizontal	Mode	Main s/div	Delay	Reference
	main	2.000us	-3.200us	left

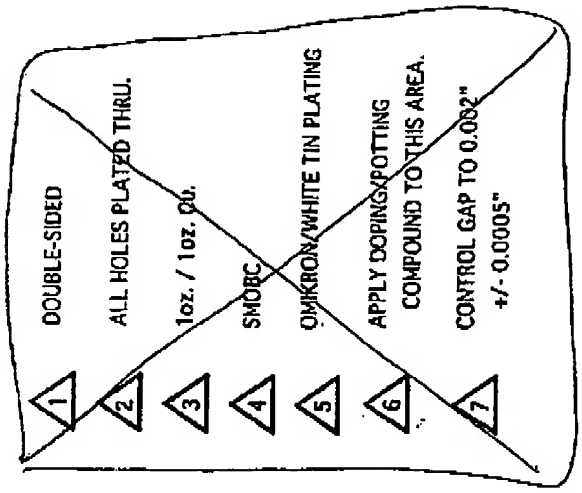
Trigger	Source	Level	Slope	Coupling	Rej	NoiseRej	Holdoff
edge	A1	0.000 V	+	dc	off	off	200.0ns

Display	Mode
	normal

Cursors V1(A1) = 0.000 V V2(A1) = 5.000 V dV(A1) = 5.000 V
t1 = -4.000us t2 = 96.00us dt = 100.0us 1/dt = 10.00kHz

FIG. 3

ANNOTATED SHEET SHOWING CHANGES



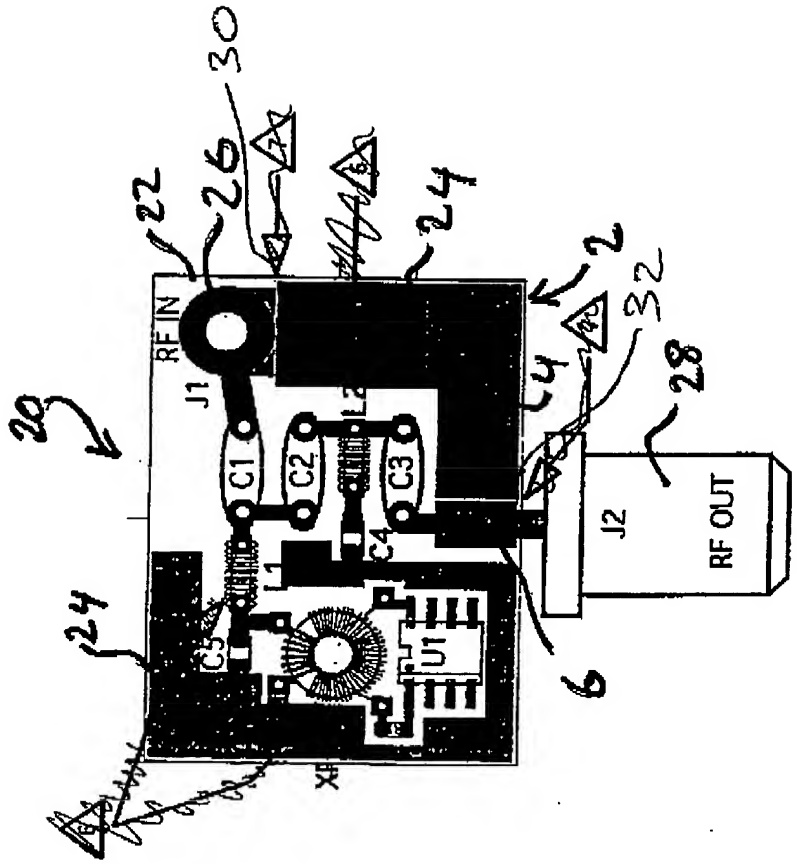


FIG. 4

Diagram 1